

Appln No. 09/501,199
Amdt date September 5, 2003
Reply to Office action of May 7, 2003

REMARKS/ARGUMENTS

Claims 1-22 were previously pending in this application. Claims 1-9, 12-19, 21 and 22 have been rejected. Claims 10, 11 and 20 were objected to. In this paper, claims 1, 6, 10, 16 and 17 are being amended, claim 5 is being cancelled, and claims 23-25 are being added. Applicants respectfully request allowance of each of pending claims 1-4 and 6-25.

I. Allowable Subject Matter

In the Office action, specifically on page 4, last paragraph, claims 10, 11 and 20 were objected to as being dependent upon a rejected base claim. The Office action further states that claims 10, 11 and 20 would be allowable if re-written in independent form including all of the limitations of the base claim and any intervening claims.

Original claim 10 depended from claim 7, which depended from claim 6, which depended from claim 5, which depended from independent claim 1. The features of claims 1, 5, 6, 7 and 10 have been combined to form new independent claim 23. Since new independent claim 23 includes all of the limitations of claim 10, base claim 1 and intervening claims 5, 6 and 7 as originally filed, claim 23 is allowable. Newly added claim 24 recites the features of original claim 11, and depends from newly added claim 23. Claim 24 is therefore also in allowable form.

Original claim 20 depended from claim 17 which, in turn, depended from claim 16. The features of claims 16, 17 and 20 have been combined to form new independent claim 25. New independent claim 25 is therefore in allowable form.

II. Rejection for Claims 1, 5-9, 12, 13, 16-19 and 21 under 35 U.S.C. §103

In the Office action, specifically on page 2, second paragraph, claims 1, 5-9, 12, 13, 16-19 and 21 were rejected under 35 U.S.C. §103(a) as being unpatentable over

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U.S. Patent No. 6,275,324 B1 to Sneh, hereinafter Sneh. Applicants respectfully submit that these claim rejections are overcome based on the reasons set forth below.

Independent claim 1 has been amended. Amended independent claim 1 recites the features of:

"the tunable filter comprising: an optical cavity having a length that is defined by first and second spaced mirrors";
and

"said first mirror is movable and bifurcated into an upper layer and a lower layer spaced from one another to define an auxiliary gap therebetween".

The cited reference of Sneh does not disclose or reasonably suggest a tunable filter with an optical cavity having two mirrors to define the length of the optical cavity, where one of the mirrors is movable and bifurcated into upper and lower layers to define an auxiliary gap therebetween, such as recited in amended independent claim 1. Amended independent claim 1 is therefore distinguished from Sneh and the rejection of claim 1 under 35 U.S.C. §103(a) as being unpatentable over Sneh, should be withdrawn. Dependent claims 6 and 10 have been amended for consistency with the amendments to independent claim 1. Claim 5 has been cancelled and claims 6-9, 12, and 13 each depend from claim 1 and therefore the rejection of claim 6-9, 12 and 13 under 35 U.S.C. §103(a) as being unpatentable over Sneh, should also be withdrawn.

Independent claim 16 has been amended. Amended independent claim 16 recites the features of:

"disrupting finesse of a tunable filter having two spaced mirrors defining an optical cavity, one of said mirrors moveable and bifurcated so that a gap is defined within the bifurcated mirror."

As above, the reference of Sneh does not disclose a tunable filter having two spaced mirrors defining an optical cavity, one of said mirrors moveable and bifurcated so that a gap is defined within the bifurcated mirror. Amended independent claim 16 is

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therefore distinguished from Sneh and the rejection of claim 16 under 35 U.S.C. §103(a) as being unpatentable over the Sneh patent, should be withdrawn.

Each of claims 17-22 depend, directly or indirectly from amended independent claim 16 and are therefore also distinguished from the Sneh reference because they incorporate the distinguishing features of claim 16. Claims 17 and 20 have been amended for consistency with the amendments to claim 16. Therefore, the rejection of claims 16-19 and 21 under 35 U.S.C. §103(a) as being unpatentable over Sneh, should be withdrawn.

III. Rejection of Claims 2-4

In the Office action, specifically on page 3, second paragraph, claims 2-4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sneh as applied to claim 1 above, and further in view of U.S. Patent No. 5,283,845 to Ip. Applicants respectfully submit that these claim rejections are overcome based on the reasons set forth below.

The cited reference of Ip has apparently been relied upon for disclosing a multi-port tunable filter with an optical cavity comprising of two mirrors and, further, for disclosing a wavelength division multiplexed signal being received by the optical cavity and outputted from the optical cavity. The cited reference of Ip, however, does not make up for the above-stated deficiencies of Sneh, namely Ip does not disclose or suggest a tunable filter with an optical cavity having two mirrors to define the length of the optical cavity, where one of the mirrors is movable and is bifurcated into upper and lower layers with an auxiliary gap therebetween. Since amended independent claim 1 recites the features discussed and highlighted above, independent claim 1 is distinguished from the references of Sneh and Ip, taken alone or in combination. Furthermore, since dependent claims 2-4 depend from claim 1, claims 2-4 are similarly distinguished from the references of Sneh and Ip, taken alone or in combination. As such, the rejection of claims 2-4 under 35 U.S.C. §103(a) as being unpatentable over Sneh as applied to claim 1 above and further in view of Ip, should be withdrawn.

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IV. Rejection of Claims 14, 15 and 22 Under 35 U.S.C. §103

In the Office action, specifically on page 4, second paragraph, claims 14, 15 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sneh as applied to claims 1 and 16 above, and further in view of U.S. Patent No. 5,103,340 to Dono, et al., hereinafter "Dono". Applicants respectfully submit that these claim rejections are overcome based on reasons set forth below.


The cited reference of Dono has apparently been relied upon for disclosing an optical cavity filter with the ability to change the cavity length and to resonate at a desired wavelength. The Office action suggests that Dono implies the optical cavity is a resonator. The cited reference of Dono, however, does not disclose or suggest the features discussed above in conjunction with claims 1 and 16, namely, Dono does not disclose or suggest the feature of an optical cavity having a length defined by two mirrors, one of the mirrors movable and bifurcated into upper and lower layers with an auxiliary gap therebetween. As such, independent claims 1 and 16 are distinguished from the cited references and therefore claims 14 and 15, which depend from claim 1, and claim 22 which depends from claim 16, are therefore also distinguished from the references of record -- Sneh and Dono. As such, the rejection of claims 14, 15 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Sneh as applied to claims 1 and 16 above, and further in view of Dono, should be withdrawn.

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CONCLUSION

For the foregoing reasons, each of claims 1-4 and 6-25 are in allowable form and therefore this application is in condition for allowance, which action applicants respectfully and expeditiously request.

Respectfully submitted,
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